BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

As rescanning documents *will not* correct images, please do not report the images to the Image Problem Mailbox.

S5 1 PN='WO 200105566'
? t5/7/1

5/7/1
DIALOG(R)File 350:Derwent WPIX
(c) 2003 Thomson Derwent. All rts. reserv.

013727886 **Image available**
WPI Acc No: 2001-212116/200122
Cooling and granulation system, for extruded plastic strand, brings about local partial crystallization above glass transition temperature, before granulation
Patent Assignee: RIETER AUTOMATIK GMBH (RIET)
Inventor: GLOECKNER F; STEINBACHER W
Number of Countries: 032 Number of Patents: 007
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
DE 19933476	A1	20010125	DE 1033476	A	19990716	200122 B
WO 200105566	A1	20010125	WO 2000EP6691	A	20000713	200122
EP 1113913	A1	20010711	EP 2000949332	A	20000713	200140
			WO 2000EP6691	A	20000713	
CN 1315900	A	20011003	CN 2000801296	A	20000713	200205
KR 2001074857	A	20010809	KR 2001702562	A	20010227	200211
TW 487624	A	20020521	TW 2000114190	A	20000908	200320
JP 2003504246	W	20030204	WO 2000EP6691	A	20000713	200320
			JP 2001510636	A	20000713	

Priority Applications (No Type Date): DE 1033476 A 19990716
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
DE 19933476	A1		8	B29B-009/06	
WO 200105566	A1	G		B29B-009/06	

Designated States (National): CA CN IN JP KR MX
Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

EP 1113913	A1	G	B29B-009/06	Based on patent WO 200105566

Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI

CN 1315900 A B29B-009/06

KR 2001074857 A B29B-009/06

TW 487624 A B29B-009/06

JP 2003504246 W 21 B29B-009/06 Based on patent WO 200105566

Abstract (Basic): DE 19933476 A1

NOVELTY - In cooling and granulation system, extruded plastic strand is partially-crystallized by a temperature-controlled liquid (4) in a crystallization section (5) Immediately after leaving the extrusion die (1). The liquid is held and maintained above the glass transition temperature of the strand. This treatment continues up to the granulation stage, which follows.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for the corresponding tempering and granulation equipment.

USE - To temper and granulate an extruded plastic strand.

ADVANTAGE - The strand length ahead of granulation is shortened, with a corresponding reduction in the size of plant. Partial crystallization takes place in an outer skin of the strand. This confers adequate strength for granulation to pellets, with no prior drying. The plant is much shorter than earlier systems which employed cold water for cooling, followed by a separate drying stage. Length of the new plant, expressed as seconds of residence time is 0.5-5 seconds. A surprise bonus awaits users: algae will not survive the hot water. The water stays relatively pure. Further process discussion is included in this disclosure.

DESCRIPTION OF DRAWING(S) - A schematic side view of the equipment is exhibited.

extrusion die (1)

temperature-controlled liquid (4)

crystallization section (5)

plastic melt (6)

pp; 8 DwgNo 1/4

Derwent Class: A31

International Patent Class (Main): B29B-009/06

International Patent Class (Additional): B29B-009/12; B29B-013/00; B29B-013/04; B29C-047/88; B29K-021-00; B29K-077-00